W. Moreland.

Extension Ladder.

No. 84,839. Patented Dec. 8, 1868.

Fig. 1

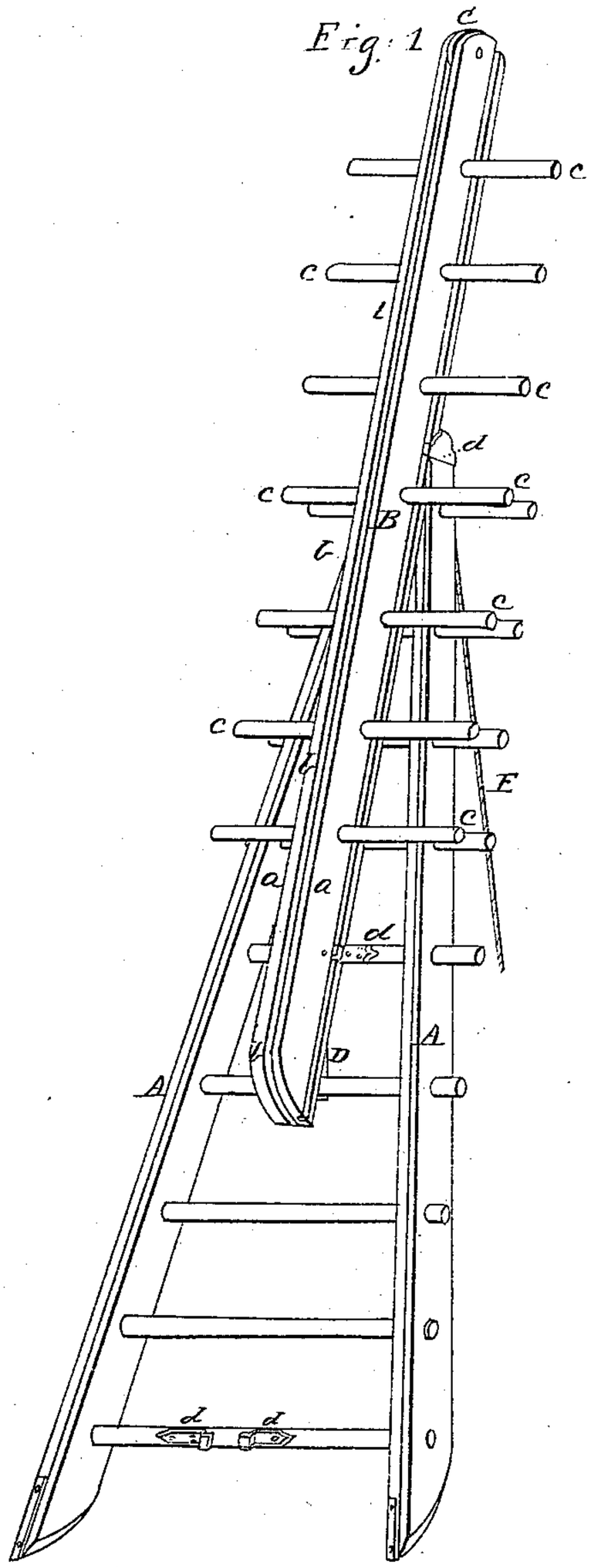
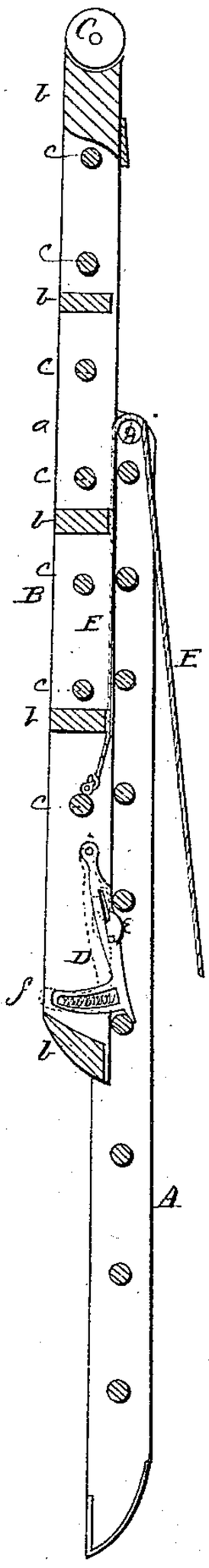


Fig. 2



Witnesses:

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WARREN MOREHEAD, OF PARKERSBURG, WEST VIRGINIA.

Letters Patent No. 84,839, *dated December* 8, 1868.

IMPROVED EXTENSION-LADDER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WARREN MOREHEAD, of Parkersburg, in the county of Wood, and in the State of West Virginia, have invented certain new and useful Improvements in Extension-Ladders; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement on my extension-ladder, patented March 14, 1865, and consists principally in providing the latch with a regulating-slide, and in constructing the sliding ladder of two beams, of single thickness, instead of one of double thickness; all of which will be hereinafter more fully set forth.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, referring to the annexed drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view, and

Figure 2, a side elevation in section.

A represents a triangular ladder, provided at the top, and at any suitable number of its rounds, with metal guides, *d d*, which work in grooves on the sides of the sliding ladder B, as shown in fig. 1.

The sliding ladder B is constructed of two beams, *a a*, placed close together, and only separated by small blocks, *b b*, placed at intervals between them, and secured in any suitable manner. The rounds *c c* are then put through the two beams, so that they extend on both sides.

The blocks *b b* do not reach entirely to the inner edge of the beams *a a*, but leave a small space, as seen in fig. 2.

By constructing the sliding ladder of two beams, as above described, I obtain room enough for the roller C at the top, the latch D, near the bottom, and groove for the hoisting-rope E, without having the trouble of grooving and mortising, as would be the case if the ladder were made of one single beam. Besides, it is far easier to obtain two beams of single thickness than one of the required double thickness.

The latch D, near the lower end of the sliding ladder B, is constructed in the same manner as in my patent above referred to, with the following addition: A regulating-slide, *e*, is placed on the upper part of the latch, and slides in a vertical slot on the same, as shown in fig. 2.

The working of the latch is as follows:

In extending the ladder, the regulating-slide *e* is moved downward by each round of the triangular ladder A, enabling the spring *f* to throw the latch out, so that it can catch on any round desired.

To lower the ladder, it is first necessary to raise it sufficiently to allow the regulating-slide *e* to pass above the round. Then lower the sliding ladder, and the slide *e*, being above the round, slides upon the latch to the upper end of its slot or grooves, then has to pass under the round, which closes the latch just at the moment when the lower end of the same would otherwise catch on the round below.

By this means, it will be seen that the sliding ladder B can be made to pass down freely.

To stop the sliding ladder at any desired round while lowering, the catch-end of the latch must first pass under the said round, and the regulating-slide under its round till released; then, by raising the sliding ladder until the slide *e* has been moved downward, the latch will drop into position.

The sliding ladder is raised and lowered by the rope E, which is secured to the sliding ladder at a suitable point to prevent it from being raised too high and getting it out of the guides. The rope E then passes over or around the pulley *h* in the upper end of the triangular ladder A.

The above-described invention is intended as an improvement upon my patent of March 14, 1865.

What I claim as an improvement upon said patent, is—

The arrangement of the sliding ladder B, constructed as described, triangular ladder A, with its guides *d d*, and the latch D and slide *e*, all constructed and operating as shown and described.

In testimony that I claim the foregoing, I have hereunto set my hand, this 14th day of October, 1868.

WARREN MOREHEAD.

Witnesses:

FRANK REX,

JAMES S. GARDNER.